

**No. 3 / 7 / 2008 / UICA (SE)**  
**Government of India**  
**Ministry of New and Renewable Energy**  
**(Urban, Industrial and Commercial Group)**

**Block NO. 14, CGO Complex,  
Lodi Road, New Delhi-110 003**

**Dated: 17<sup>th</sup> February, 2009**

To

Heads of State Nodal Agencies

**MODIFIED SCHEME**

**Subject : Implementation of the scheme on “Demonstration and Promotion of Solar Photovoltaic Devices/ Systems in Urban Areas & Industry” during 2008-09 and rest of the 11<sup>th</sup> Plan period**

Sir,

In continuation of this Ministry's sanction of even no. dated 24<sup>th</sup> June, 2008 issued for continuation of the above mentioned scheme during 2008-09, I am directed to convey the sanction of the President for modifying the scheme on “Demonstration and Promotion of Solar Photovoltaic Devices/ Systems in Urban Areas & Industry” for implementation during remaining part of 2008-09 and 11<sup>th</sup> plan period as per the details given below:

**1.0 Objectives**

The major objectives of promoting/ demonstrating solar photovoltaic devices/ systems in urban areas and industry will be as follows:

- i) To create awareness & demonstrate effective alternate solutions for community/ institutional solar based systems in urban areas and industry
- ii) To reduce the burden on conventional electricity in cities/ towns facing shortage of power especially during peak hours
- iii) To save highly subsidized diesel in institutions and other commercial establishments including industry facing huge power cuts especially during day time

**2.0 Type of systems to be demonstrated/ promoted**

Following systems/devices will be promoted in urban areas:

➤ **Systems mainly for electricity conservation**

- Solar street lights
- Solar traffic signals

- Solar blinkers
  - Solar power packs/inverters
  - Solar illuminating hoardings/ Bill boards
  - Other systems of community use as felt necessary by Implementing Agencies
- **Systems for abatement of diesel & other fuel oil**
- Roof top SPV systems with or without grid interaction

The systems other than roof top will be installed on demonstration basis in autonomous mode with grid acting as a stand by arrangement for charging the batteries through rectifier/inverter during cloudy/rainy days, if necessary. Retrofitting of existing conventional system with solar may be done to avoid high cost of installations wherever possible. Partial support in form of capital subsidy will be available for installation of these systems from the Ministry. Brief information about some of the systems is given in the **Annexure.**

### 3.0 Physical Targets

Indicative targets as per the following has been set for 2008-09 and rest of the 11<sup>th</sup> period. Higher targets may be considered in case the set targets are achieved subject to availability of funds.

Systems/ Activity	Physical (in kW)				11 <sup>th</sup> Plan	
	2008-09	2009-10	2010-11	2011-12	Physical	Financial
Systems mainly for electricity conservation	0.1 MW	0.25 MW	0.30 MW	0.10 MW	0.75 MW	Rs. 11.25 crore
Systems (Roof top ) for abatement of diesel & other fuel oil	0.25 MW	1.75 MW	1.9 MW	0.35 MW	4.25 MW	Rs. 36.00 crore
Promotional Activities	-	-	-	-	-	Rs. 0.75 crore
<b>Total</b>	<b>0.35 MW</b>	<b>2.0 MW</b>	<b>2.20 MW</b>	<b>0.45 MW</b>	<b>5 MW</b>	<b>Rs. 48.00 crore</b>

### 4.0 Implementation Arrangements

The scheme will be implemented through State Nodal Agencies. In specific cases, it could be implemented by other Govt. bodies/ technical organizations Other organizations such as IREDA/ Reputed NGOs/ Technical Institutions will also be involved in organizing publicity awareness campaign, seminars/ workshops/ symposia/ training etc. Detailed guidelines for implementation of the scheme and financial provisions for various activities are given in the **Annexure.**

## 5.0 Monitoring Mechanisms

The Implementing Agencies will closely monitor the implementation of the projects undertaken by them under the scheme. The agencies will furnish progress reports and other information to MNRE on a quarterly basis. In addition Regional Offices of MNRE will be involved in monitoring the implementation and performance of the systems. Monitoring may also be got done through independent body/consultant etc., if felt necessary.

## 6.0 Expenditure

An expenditure of Rs. 48.00 Crore is expected to be incurred under the Programme on "Demonstration and promotion of solar photovoltaic devices/ systems in urban areas and industry" during remaining part of 2008-09 and the 11<sup>th</sup> Plan period. Year-wise phasing of the expenditure is given as below:

Year	2008-09	2009-10	2010-11	2011-12	Total
Budget (Rs. in Crore)	1.50	20.00	22.00	4.50	48.00

The budget will be met from the allocated budget for the programme on Solar Photovoltaic systems under Demands-for-Grants of the Ministry.

**7.0** This sanction issues in exercise of the powers delegated to this Ministry and with the concurrence of IFD vide their Diary No. IFD/ 2021/08 dated 9.2.2009 and concurrence dated 12.2.2009.

Yours faithfully,

**(B. K. Trikha)**

Under Secretary to Government of India  
Phone: 011-24360707, Extn. 234

Copy for information and necessary action to:

1. Director of Audit, Scientific Audit-II, DACR Building. I.P. Estate, New Delhi-110002
2. PS to MOS
3. Sr. PPS to Secretary, MNRE
4. AS & FA / JS (F) / US (F) /AO(F)
5. All Group Heads / Solar Energy Center
6. Adv(SE)/ Dir (AKS) / Dir (DN)/ Dir(AKT)
7. Regional Offices of MNRE
8. CMD, IREDA
9. Cash Section
10. Pay & Account Officer, MNRE
11. Sanction folder

**Financial provisions and guidelines for implementation of the scheme on  
'Demonstration and Promotion of Solar Photovoltaic  
Devices/ Systems in Urban Areas & Industry'**

**1. Brief description of SPV systems to be demonstrated/ promoted**

**1.1 Systems mainly for electricity conservation**

➤ **Solar street lights**

Solar street lights have so far mainly been deployed in rural areas. However, solar street lights or outdoor lights could also be suitable for out-lying areas, unlit roads, boundaries of institutions, hospitals and industrial units, residential colonies etc. which may not require very high intensity lighting. Such lights could also be installed on main roads, at selected locations, to ensure minimum lighting in case of any exigency such as power cuts, to ensure safety of the public. They can also be used for lighting public gardens and parks. Increased deployment of solar street lights can help to conserve electricity during the evening peaks in cities and towns. Solar street light with high illumination and battery security are also now available which could be installed in areas where brighter lights are required. To make powerful presence of solar street lights, important high way, air port approach roads, popular tourist destination and parks/ monuments may be preferred. LED based solar street lights are getting popular these days due to their lower cost. To reduce peak load demands during evening hours, these lights needs to be installed in large number in cities and towns.

➤ **Solar powered illuminated hoardings/ Bill boards**

Large advertising hoardings/ Bill boards are a common sight in many cities. These hoardings are illuminated throughout the night by high intensity lamps. Most hoardings employ 4 to 12 lamps and consume a vast amount of energy. This power, if saved, can reduce the peak load demand in cities and towns especially during 6 pm to 10 pm. It is technically possible to provide solar power to atleast the smaller hoardings for 4 to 6 hours every day. SPV power system of 500 W to 1 kW may be able to meet this requirement. As per an Order of Maharashtra Electricity Regulatory Commission, conventional neon signs, illuminated hoarding, flood lights have been banned in Mumbai between 5 pm and 11 pm in order to save energy. Solar hoardings/ Bill boards may be encouraged where sites are permanently owned by Govt. and messages of National Importance can be relayed like traffic situation, accident occurrence, pollution, flooding, VIP movements, processions, school timings etc.

➤ **Solar powered traffic signal systems**

Frequent breakdowns in power supply lead to failure of conventional traffic lights in cities and consequent chaos in the flow of traffic. This problem can be solved by changing over to completely solar powered traffic lights or using solar hybrid systems with conventional power as standby arrangement. Solar powered traffic lights employ energy

efficient light emitting diodes (LEDs) which consume very nominal energy and thus could be installed at a reasonable cost. Some space is needed to place the modules and the batteries. Solar traffic light may be preferred where traffic snarls are a regular feature and that either there is no electricity or have very frequent breakdowns. In electrified areas, it needs to be ensured that they run on solar first, and do not become show piece.

➤ **Solar blinkers**

LED based SPV traffic blinkers have advantages in terms of reliability and longer life in comparison with the traditional devices. Apart from the reliable power back-up of SPV, the advantages of using such devices, besides the exceptional lighting efficiency, are their particular radiation angle which allows concentration of the light in a very tight angle and permits visibility even from a long distance, as also in bad weather conditions. The electronic controllers allow constant current supply to the LED together with light control. Solar blinkers could be useful at blind intersections, ahead of road humps, sharp bends/ U-turns, pedestrian crossings, etc. These may be encouraged where there is concentration of schools and lot of children cross roads or near hospitals where accidents are frequent or acute and such records/ strategies are available.

➤ **Solar power packs**

These systems can effectively replace small generators based on kerosene and petrol. Such generators cause pollution, noise and lead to increased dependence on oil imports. The solar power packs installed in shops, clinics, banks, nursing homes etc. could provide power for lights, fans, computers, etc. or other emergency requirements. These could be installed in a big way in states facing huge power shortage.

➤ **Other systems of community use**

These systems could be solar street light control systems, road studs, solar charging station for battery operating lanterns useful for slum areas/ vegetable markets etc, SPV water pumps for drinking purposes etc.

**Note:** LED based systems require less power for their operation and thus may be preferred wherever possible due to their lower cost. The systems may be installed at places which have visible impact on a given community/ selection of population/ Municipality/ a region/ city and leave visible marks/ impression. These include urban slums, VIP habitat, diplomatic enclaves, Government housing colonies etc.

**Systems for abatement of diesel & other fuel oil**

➤ **Roof top SPV systems**

Several cities and towns in the country are experiencing a substantial growth in their peak electricity demand. Municipal Corporations and the electricity utilities are finding it difficult to cope up with this rapid rise in demand and as a result most of the cities/towns are facing severe electricity shortages. Various industries and commercial establishments e.g. Malls, Hotels, Hospitals, Nursing homes etc. , housing complexes developed by the

builders and developers in cities and towns use diesel generators for back-up power even during the day time. Rooftop solar photovoltaic systems (with or without grid interaction) installed in such establishments/ complexes will help the owners in saving the precious diesel/ other fuel oil which is highly subsidized by the Government. With the kind of support available from MNRE as per below and accelerated depreciation benefit available to commercial establishments/ industry, the payback period may be around 5 years to all types of beneficiaries.

## 2 Financial provisions

**2.1** Systems for individuals/ homes e.g. solar lantern, solar home systems etc. are not covered under the scheme.

### **2.2 Systems mainly for electricity conservation (support limited to 1 KW SPV panel)**

Central Financial Assistance for following systems @ Rs. 150 per watt of SPV panels upto a capacity of 1 kW each with required storage batteries ( preferably 6 hours ) to a maximum of 50% of cost of system to urban local bodies/ SNAs/ Institutions not availing depreciation benefits and @ Rs. 100 per watt to a maximum of 33% of the cost of systems with similar conditions to commercial establishments/ industry availing depreciation benefit will be available, whichever are applicable. In specific cases, where battery storage is not required, the support will be @ Rs. 115 per watt and Rs. 75 per watt respectively:

- Solar street lights
- Solar traffic signals
- Solar blinkers
- Solar power packs/inverters
- Solar illuminating hoardings/ Bill boards
- Other systems of community use as felt necessary by implementing agencies subject to Ministry's satisfaction on product utility

Maximum capacity of the systems to be supported in a State will not be more than 1/5<sup>th</sup> of the target for a particular year as given in 3.0 of Sanction Order, out of which not more than 1/5<sup>th</sup> capacity will be supported in a single Urban Local Body. Support for solar street lights will be limited to 50% of total capacity of SPV Systems / devices in an Urban Local Body supported under our scheme. This is illustrated as below:

Year	2008-09	2009-10	2010-11	2011-12
<b>Total target</b>	<b>100 kW</b>	<b>250 kW</b>	<b>300 kW</b>	<b>100 kW</b>
<b>Maximum capacity to be supported in a State</b>	20 kW	50 kW	60 kW	20 kW
<b>Maximum capacity to be supported in an Urban Local Body</b>	4 kW	10 kW	12 kW	4 kW

<b>Maximum capacity of street lights to be supported in an Urban Local Body</b>	2 kW	5 kW	6 kW	2 kW
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Note : Higher capacity of systems could be supported in a State after 31<sup>st</sup> December of each year, in case proposals received from all the States are less than the total target set for that year.

### **2.3 Systems for abatement of diesel & other fuel oil (support limited to 100 KW SPV panels)**

Central Financial Assistance for roof top SPV Systems @ Rs. 75 per watt of SPV panels to a maximum of 30% of the cost of systems to profit making bodies availing depreciation benefits and @ Rs. 100 per watt to a maximum of 40% of the cost of systems to non-profit making bodies (with or without grid interaction) limited to 100 kW capacity will be available mainly for day time use. This will include institutions, Govt. Buildings, commercial establishments, industry and housing complexes etc.. Minimum capacity of installation will be 25 kW. Smaller systems (not less than 10 KW) may be considered as special case. No targets are set for these systems to State/ Urban Local Bodies. Proposals will be considered on first come first served basis.

### **2.4 Other Activities**

➤ **Seminars/ workshops/ symposia/ training** : Support will be provided to State Nodal Agencies/ Municipal Corporations/ Technical institutions for organizing seminars/ workshops/ symposia/ training to create awareness and training etc.on installation of the systems in urban areas. CFA upto a maximum of Rs. 2 lakhs per event will be provided for organizing such events on case-to-case basis.

➤ **Publicity & Awareness** : All possible avenues such as print, electronic (audio and visual) media will be utilized to create awareness through State Nodal Agencies/Municipal Corporations/Associations of solar photovoltaic systems/ devices for community/institutional use in urban areas. Information packages for various types of systems will also be prepared through technical institutions/ professional agencies. CFA upto a maximum of Rs. 5 lakhs will be provided on case-to-case basis for such activities. MNRE will also organize publicity campaigns directly as well as through IREDA.

### **2.5 Administrative Charges**

The implementing Agencies will be provided service charges @ 2% of CFA sanctioned for the demonstration projects. The agencies will ensure that an Annual Maintenance Contract (AMC) for 5 years is included in the total cost of the system. In specific cases, if beneficiary ensures that he will get its own manpower trained to operate and maintain the system after one year guarantee/ warrantee given by the manufacture, the proposals may be considered by the Ministry. A certificate in this regard will be taken from the beneficiary..

### **3. Implementation of Projects**

Implementing agencies will be free to decide about the capacity and other specifications of the systems to be installed in their areas. Details of the systems finalized, however, will be provided while submitting proposals to MNRE. They will give an undertaking that systems will be installed in urban areas. The project completion duration will be one year from the date of issue of sanction. Under specific, unavoidable conditions, the Implementing agency may request for extension.

### **4. Submission of proposals and release of CFA**

The proposals for installation of systems developed in association with SNA and the manufacturer selected by the beneficiaries on competitive basis (cost and quality) will be submitted to MNRE in the prescribed format (**Annexure-I (a) & (b)**) through State Nodal Agencies. The list of manufacturers will be made available at MNRE website. 50% of the CFA will be released in advance to SNAs along with the sanction who will further release it money to beneficiaries immediately after supply of equipment at site. The balance 50% will be released on installation and commissioning of the systems including satisfactory performance report from beneficiaries. Cost other than CFA will be met by the State Government/ User Organization for which necessary commitment would be required while submitting the proposal. In specific cases the proposals could be submitted through other Govt. Departments/ technical organizations.

Proposals for organizing seminars/ workshops/ symposia/ training and publicity & awareness campaign will also be submitted in the prescribed format (**Annexure-II**). 80% of CFA will be released in advance and the balance will be released on receipt of completion documents.

### **4. Settlement of accounts**

Accounts with the implementing agencies will be settled based on audited SOE & Utilization Certificate received in the Ministry in prescribed format (**Annexure-III & IV**) alongwith detailed report.

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**Format for submission of proposals for installation of SPV Devices/Systems  
in Urban Areas mainly for electricity conservation  
(To be submitted by SNAs)**

1. Name of Implementing/ State Nodal Agency :  
2. Details of the systems to be installed :

## a) By Urban Local Bodies

Sr. No	Systems to be installed	No. of Units	PV panel capacity of each system	Total PV panel capacity	System* with battery /without battery	Cost per system	Total cost of systems	Subsidy @ Rs..... per watt of PV panel	Total MNRE subsidy sought	Means of balance funds	Expected date of completion
Name of Urban Local Body 1											
1.											
2.											
	Total										
Name of Urban Local Body 2											
1.											
2.											
	Total										
	Grand Total										

\* Detailed specifications of complete system/ device to be are enclosed

## b) By Non- profit making institutions

Sr. No	Type of systems to be installed	No. of Units	PV panel capacity of each system	Total PV panel capacity	System* with battery/witho ut battery	Cost per system	Total cost of systems	Subsidy @ Rs..... per watt of PV panel	Total MNRE subsidy sought	Means of balance funds	Expected date of completion
Name of institutions											
1.											
2.											
	Total										
Name of institutions											
1.											
2.											
	Total										
	Grand Total										

\* Detailed specifications of complete system/ device to be are enclosed

c) By commercial establishments/ industry

Sr. No	Type of systems to be installed	No. of Units	PV panel capacity of each system	Total PV panel capacity	System* with battery/with out battery	Cost per system	Total cost of systems	Subsidy @ Rs..... per watt of PV panel	Total MNRE subsidy sought	Means of balance funds	Expected date of completion
Name of establishment											
1.											
2.											
	Total										
Name of establishment											
1.											
2.											
	Total										
	Grand Total										

\* Detailed specifications of complete system/ device to be are enclosed

Certified that

- i) the current proposal including proposals submitted earlier during the current year fulfills the condition given at para 2.1 of MNRE scheme on SPV devices/systems for urban areas and industry.
- ii) Proposals received from Urban Local Bodies/ institutions/ commercial establishments have been examined, verified and found to be satisfactory. Copies of proposals are enclosed.
- iii) Annual Maintenance Contract (AMC) for 5 years is included in the total cost of the systems. In specific cases, beneficiary has given assurance that he will get its own manpower trained to operate and maintain the system after one year guarantee/ warrantee given by the manufacture. A certificate in this regard has been taken from the beneficiary and is enclosed with the proposal.
- iv) All the above systems will be installed in urban.

Signature with name of  
Head of the implementing agency/  
organization with Seal

Encl.: As above

**Format for submission of proposal to MNRE for financial support for installation of  
Roof Top SPV system for abatement of diesel/other fuel oil**

1.	Name of establishment with complete postal address, telephone, fax number and e-mail address for correspondence purpose.	:	
2.	Whether profit making/ non-profit making		
3.	Total sanction/ connected grid load		
4.	Load on DG set during off grid/ load shedding - Minimum - Maximum		
5.	DG sets installed with capacities i) ii) iii)		
6.	Average hours of power cut during day time		
7.	Details of system proposed to be installed at beneficiary's premises	:	
	i) Place of installation	:	
	ii) Capacity of SPV panels proposed to be installed (kW)	:	
	iii) Other components of SPV systems proposed to be installed	:	
	iv) Total roof area required for installation of the system (sq.m)	:	
	v) Shade free area available at the premises from 8 AM to 5 PM (sq.m)	:	
8.	Comparative statement on cost details and technical specifications of different components of complete system from various suppliers	:	(To be enclosed)
9.	Name and address of supplier identified for installation of the system	:	
10.	Details of the project report prepared by the identified supplier (Report will include the technical specifications of various components and their life period)	:	To be enclosed alongwith supplier's past experience on such system, if any

11.	Expected outcome from proposed installation in terms of fuel savings with detailed calculations.		
12.	Item wise budget break up ( including AMC for 5 years)*		
13.	MNRE support sought as per the scheme provisions		
14.	Means of balance financing		
15.	Commitments from the beneficiary  i) We will bear the remaining (apart from the MNRE support) cost as per details in para 14 above. ii) We will not dismantle the system at any stage without prior written permission of MNES iii) We will regularly use and properly maintain the system and submit quarterly performance report for a minimum period of one year from the date of installation through implementing agency. iv) We will take Annual Maintenance contract for a period of at least 5 years after completion of the warranty period from manufacturer*.		

\* In specific cases, if beneficiary ensures that he will get its own manpower trained to operate and maintain the system after one year guarantee/ warrantee given by the manufacture, the proposal may be considered by the Ministry. A separate certificate in this regard will be required from the beneficiary..

Date .....

**Signature with name and Seal of  
Head of beneficiary organization**

Facts examined and verified by .....

**(Signature with name and seal of  
Implementing Organization)**

## **Annexure-II**

### **Format for submission of proposals for organizing seminars/ symposia/ workshops/ training programmes etc.**

1. Name of Institution organizing the event :
2. Type of event to be organized :
3. Date(s)/ venue of the event :
4. Category of participants :
5. Tentative programme with topics to be covered (copy to be enclosed) :
6. Budget break up (item-wise) :
7. Expected outcome :

**Signature of  
Head of Implementing organization**

### **Format for submission of proposals for organizing publicity and awareness campaign**

1. Name of Institution organizing the activity :
2. Type of activity to be organized :
3. Details of activities to be organized :
4. Budget break up (item-wise; supporting documents for arriving at the figures to be provided) :
5. Expected outcome :

**Signature of  
Head of Implementing organization**

**Statement of Expenditure**  
(For all activities/ projects)

1. Name of implementing organization :
2. Type of activity/ project sanctioned :
3. MNRE sanction No. & Date :
4. Amount released by MNRE :
5. Interest accrued on release, if any :
5. Item-wise/Activity/System-wise Statement of Expenditure:

(In Rupees)

Name of beneficiary	Sr. No.	Details of Items/ Activities/ Systems* sanctioned	Amount/ CFA sanctioned	Expenditure incurred against MNRE Support	Total expenditure incurred including MNRE support**
<b>Beneficiary No. 1</b>	1.				
	2.				
		<b>Sub-total</b>			
<b>Beneficiary No. 2</b>	1.				
	2.				
		<b>Sub-total</b>			
		<b>Total</b>			

6. Balance to be released/ returned (including interest accrued if any) :
7. Report on the activity/ project (to be enclosed) :

\* In case of SPV systems/ devices, installation & commissioning report from implementing agency and satisfactory performance report from beneficiary to be enclosed.

\*\* Detailed break-up of total expenditure may be obtained from the beneficiary.

**(Signature of Account Officer  
with seal)**

**(Signature of Head of  
Implementing organization)**

**(Signature and seal  
of the Auditor)**

**GFR 19-A**  
[ See Rule 212 (1) ]

**Form of Utilization Certificate**

Sl. No.	Letter No. and date	Amount
	Total	

Certified that out of Rs.....of grants-in-aid sanctioned during the year..... in favour of .....under this Ministry/ Department Letter No. given in the margin and Rs..... on account of unspent balance of the previous year, a sum of Rs.....has been utilized for the purpose of .....for which it was sanctioned and that the balance of Rs.....remaining unutilized at the end of the year has been surrendered to Government (vide No....., dated .....)/ will be adjusted towards the grants-in-aid payable during the next year.....

2. Certified that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been duly fulfilled / are being fulfilled and that I have exercised the following checks to see that the money was actually utilized for the purpose for which it was sanctioned.

*Kinds of checks exercised*

- 1.
- 2.
- 3.
- 4.
- 5.

Signature.....  
Designation.....  
Date .....